McCarty Engineering, INC.	Project:	Bull Meadow Estates	Proj. No:	66
			Date:	11/29/16
	City:	North Grafton	Comp:	BRM
	State:	MA	Check :	PJM

Converting WQv to Fow Rate for Sizing Proprietary Stormwater Treatemnnt Practices

Required WQv = 0.5 inch

$Q_{0.5}$=(qu)(A)(WQv)

qu = Unit Peak Discharge in csm/in - This Variable derived from MADEP Flow rate table, Figure 2 (attached).
A = Impervious Area in square miles (sm) - 1 ac = 0.0015625 sm
WQv= Water Quality Volume in watershed inches (0.5 in)

Structure

DMH 7A

Tc= 5 minutes = 0.083 hours
qu= 773 csm/in
A= 0.388 ac = 0.00060 sm
WQv= 0.5 in

Required WQv= (773 csm/in)x(0.00060 sm)x(0.5 in)
Required WQv= 0.235 cfs

DMH 2

Tc= 5 minutes = 0.083 hours
qu= 773 csm/in
A= 0.567 ac = 0.00088 sm
WQv= 0.5 in

Required WQv= (773 csm/in)x(0.00088 sm)x(0.5 in)
Required WQv= 0.340 cfs

DMH 8

Tc= 5 minutes = 0.083 hours
qu= 773 csm/in
A= 0.633 ac = 0.00098 sm
WQv= 0.5 in

Required WQv= (773 csm/in)x(0.00098 sm)x(0.5 in)
Required WQv= 0.378 cfs

CB 11

Tc= 5 minutes = 0.083 hours
qu= 773 csm/in
A= 0.152 ac = 0.00023 sm
WQv= 0.5 in

Required WQv= (773 csm/in)x(0.00023 sm)x(0.5 in)
Required WQv= 0.088 cfs

CB 12

Tc= 5 minutes = 0.083 hours
qu= 773 csm/in
A= 0.050 ac = 0.000079 sm
WQv= 0.5 in

Required WQv= (773 csm/in)x(0.000079 sm)x(0.5 in)
Required WQv= 0.030 cfs

CB 13

Tc= 5 minutes = 0.083 hours
qu= 773 csm/in
A= 0.126 ac = 0.00019 sm
WQv= 0.5 in

Required WQv= (773 csm/in)x(0.00019 sm)x(0.5 in)
Required WQv= 0.073 cfs

CB 14

Tc= 5 minutes = 0.083 hours
qu= 773 csm/in
A= 0.110 ac = 0.00017 sm
WQv= 0.5 in

Required WQv= (773 csm/in)x(0.00017 sm)x(0.5 in)
Required WQv= 0.065 cfs